


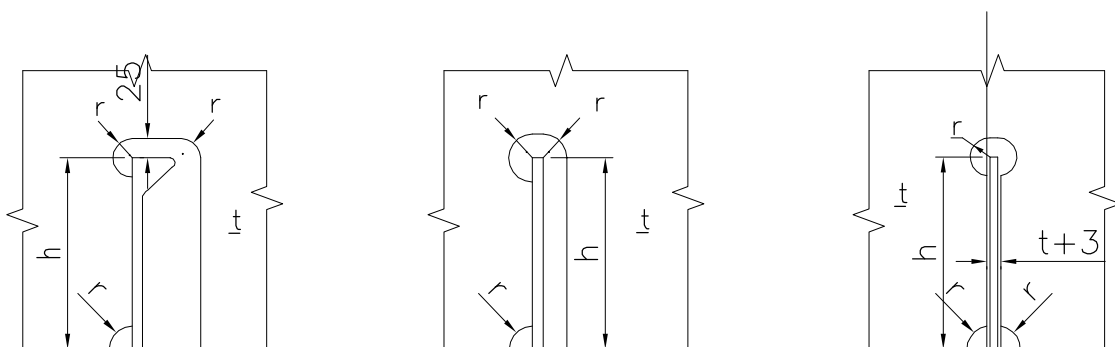
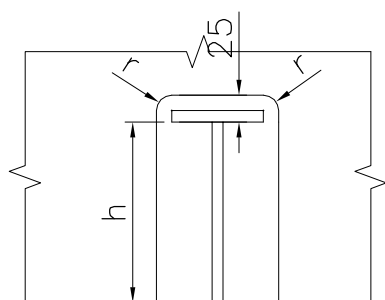
RO	2008.6.24	ISSUE FOR APPROVAL		YE	
REV	DATE	DESCRIPTION		BY	CHKD. APPD.
 CS Marine <small>Web: www.csmarine.net Tel: (86)021-51029058 Fax: (86)021-65341020</small>		CLIENT NGM			
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DRAWN	YE	2008.6.24	PROJ NOVCS563E	75200DWT BULK CARRIER	
CHKD			CLASS BV		
APPD			TITLE: HULL CONSTRUCTION STANDARD 船体结构节点图册		
HULL NO JL0019/20		DWG NO H1-1100		REV. R0	SHEET 1 / 18
				SCALE 1:1	

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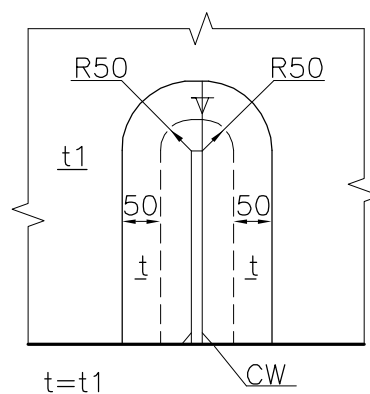
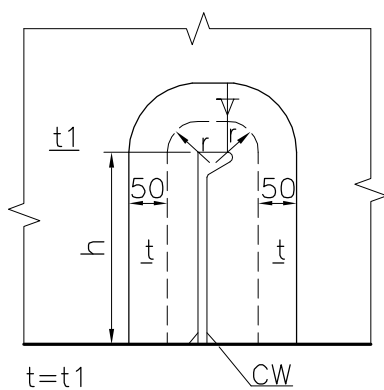
ABBREVIATION LIST 英语缩写表

BHD.	BULKHEAD	舱壁、隔壁
FL.	FLANGE	折边
O.T.	OIL-TIGHT	油密
W.T.	WATER-TIGHT	水密
STIFF.	STIFFENER	扶强材
BKT.	BRACKET	肘板
T.B.	TRIPPING BRACKET	防倾肘板

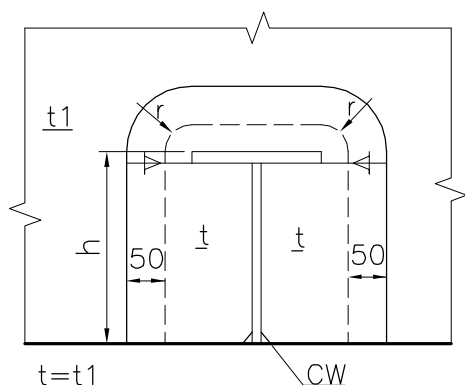
1. NOTCH & COLLAR PLATE 相贯切口与补板

A: NON WATERTIGHT NOTCH 非水密型切口BULB PLATE: 球扁钢FLAT BAR: 扁钢T BAR : T 型材

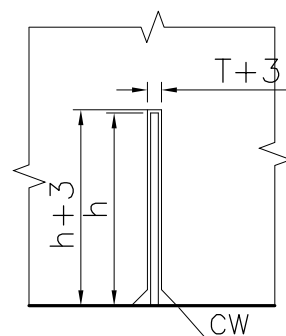
h	r
<100	25
100≤h<150	25
150≤h<250	35
≥250	50

B : WATERTIGHT TYPE NOTCH & COLLAR PLATE 贯穿开口水密补板BULB PLATE: 球扁钢FLAT BAR: 扁钢

T BAR : T 型材

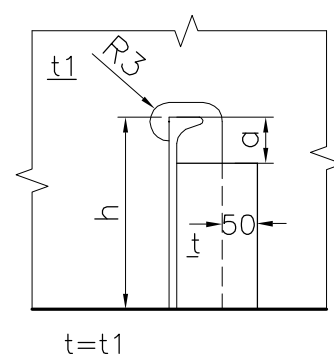
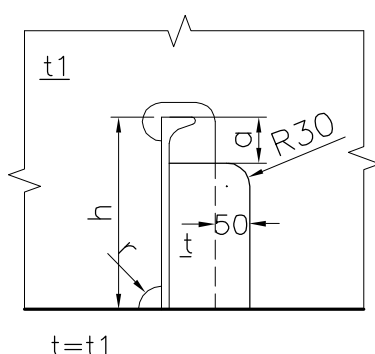
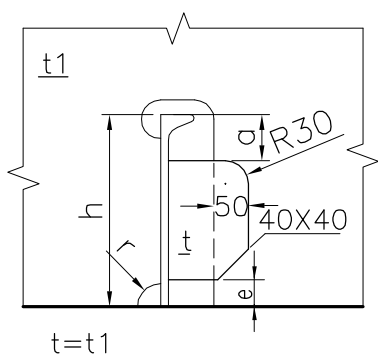


h	r
<100	25
100≤h<150	25
150≤h<250	25
≥250	25



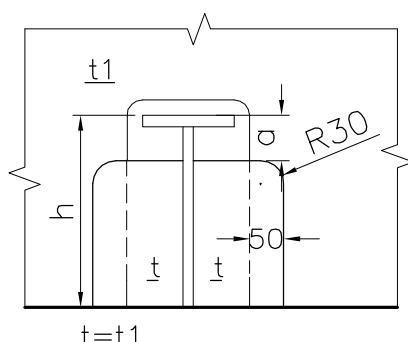
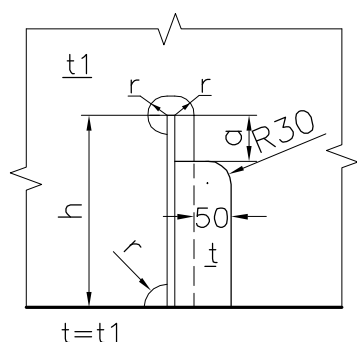
C: NON WATERTIGHT NOTCH COLLAR PLATE 非水密贯穿开口补板

BULB PLATE: 球扁钢



FLAT BAR: 扁钢

T BAR : T 型材



h	a	e	r
<100	0.2h	—	25
100≤h<150	0.2h	25	25
150≤h<250	0.2h	35	35
≥250	0.2h	50	50

NOTE: 说明

a) WHEN NO SCALLOP IS PROVIDED AT THE SLOT FOR STEEL SECTION PENETRATION, NOTED "CW".

(WHEN $t < 15$, 10x10; WHEN $t \geq 15$, 15x15)a) 当型钢贯穿切口处不用扇形切角时, 标注CW。(当 $t < 15$: 10X10; 当 $t \geq 15$: 15X15)

b) IN SPECIAL CASES, A SCALLOP IS PROVIDED AT THE SLOT FOR STEEL SECTION PENETRATION, BUT LIMITED TO THE SLOTS OF STRUCTURAL MEMBERS NECESSARY FOR RUNNING OF WATER, OIL, ETC. IN TANKS, AS FOLLOWS:

b) 特殊情况下, 必须在型钢贯穿切口上开设扇形切角, 但应限制在让油、水流通的深舱中的构件切口处。例如:

(1) SLOTS ON VERTICAL MEMBERS FOR RUNNING BOTTOM LONGITUDINALS, BILGE LONGITUDINALS, SIDE LONGITUDINALS, HORIZONTAL STIFFENERS, LONGITUDINALS ON UPPER SURFACE OF TANK BOTTOM PLATE, ETC.

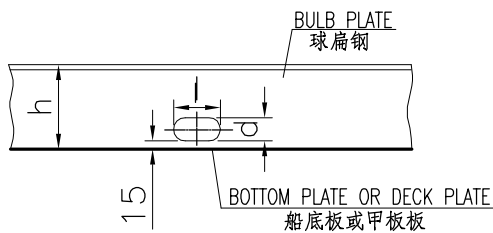
(1) 船底纵骨、舳部纵骨、舷侧纵骨、水平扶强材和深舱底纵骨在垂向构件上的贯穿切口处。

(2) SLOTS ON HORIZONTAL MEMBERS FOR RUNNING VERTICAL FRAMES AND VERTICAL STIFFENERS.

(2) 垂向肋骨和垂向扶强材在水平构件上的贯穿切口处。

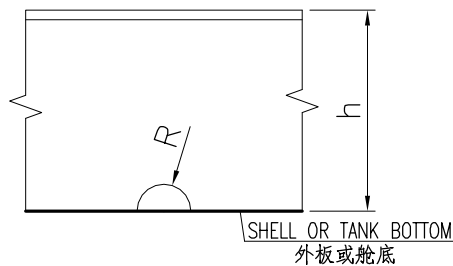
2. DRAIN & AIR HOLE 流水孔和透气孔

DRAIN HOLE 流水孔



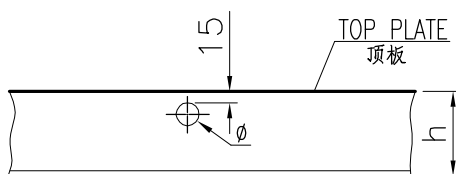
Note: suited for bottom tank structure and exposed deck structure
注：适用于底舱构件和露天甲板结构

h	d X l
$h < 120$	25X50
$120 \leq h < 200$	30X60
$200 \leq h < 300$	40X80
$300 \leq h < 500$	50X100
$h \geq 500$	designer decide

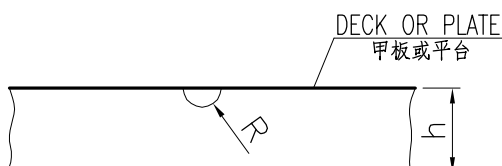


h	R
$120 \leq h < 160$	30
$160 \leq h < 200$	40
$200 \leq h < 300$	50
$300 \leq h < 500$	75
$h \geq 500$	designer decide

AIR HOLE 透气孔

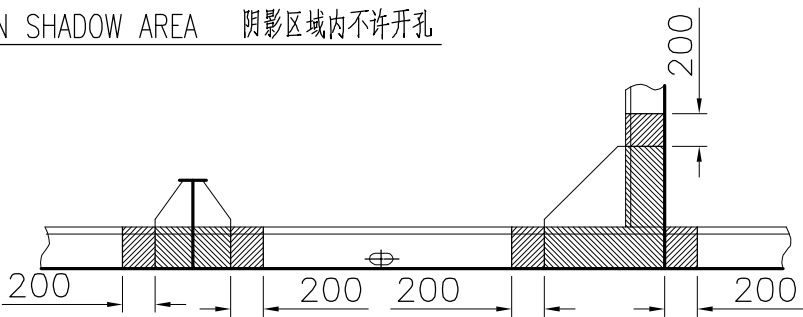


h	φ
$h < 120$	15~25
$120 \leq h < 160$	30
$160 \leq h < 250$	40
$h \geq 250$	50



h	R
$h < 120$	15~25
$120 \leq h < 160$	30
$160 \leq h < 250$	40
$h \geq 250$	50

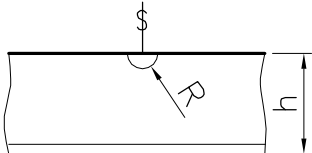
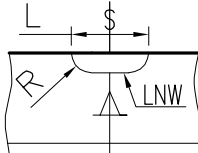
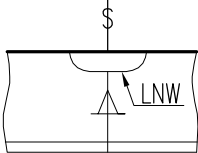
NO HOLES IN SHADOW AREA 阴影区域内不许开孔



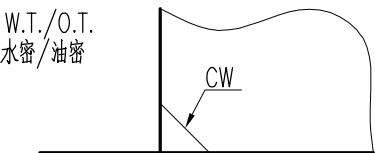
3. WELDING HOLE 通焊孔

A: BUTT WELDING HOLE 对接焊缝通焊孔

W.T./O.T. 水密/油密		W.T./O.T BLOCK SEAM 水密/油密分段合拢口	
TYPE AND DIMENSION: 型式和尺寸	MARK: 标记	TYPE AND DIMENSION: 型式和尺寸	MARK: 标记

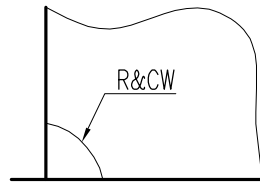
NON W.T. 非水密	 <table><tr><td>h</td><td>$100 \leq h < 150$</td><td>$150 \leq h < 250$</td><td>≥ 250</td></tr><tr><td>R</td><td>35</td><td>35</td><td>35</td></tr></table>	h	$100 \leq h < 150$	$150 \leq h < 250$	≥ 250	R	35	35	35
h	$100 \leq h < 150$	$150 \leq h < 250$	≥ 250						
R	35	35	35						
NON W.T.BLOCK SEAM 非水密分段合拢口	 <table><tr><td>RXL</td><td>35X90</td></tr></table>	RXL	35X90	MARK: 标记 					
RXL	35X90								

B: FILLET WELDING HOLE 角接焊缝通焊孔



CW	t<15	10X10
	t≥15	15X15

NON W.T./O.T.
非水密/油密



h	CW	R
$100 \leq h < 150$	CW	25
$150 \leq h < 250$	CW	35
$250 \leq h < 350$	CW	50
$350 \leq h < 1000$	CW	75

WHEN ONLY ACT AS WELDING HOLE
CW IS USED
如仅做通焊孔, 可用CW。
WHEN ACT AS WELDING HOLE&DRAIN HOLE,
R IS USED
当通焊孔兼做流水孔时, 必须用R。

4. END ATTACHMENT 端部结构

NOTE: (1) FREE EDGE OF BKT. $> 50t$, FL. OR FACE PLATE TO BE NEEDED.

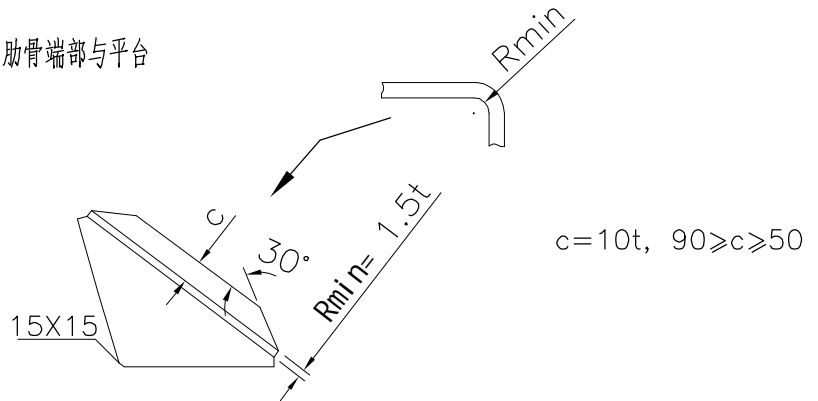
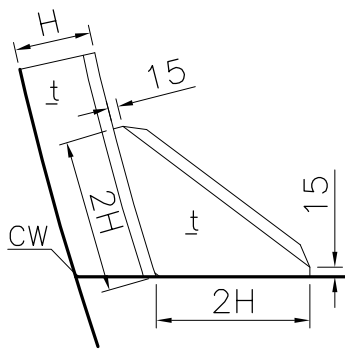
(2) FACE PLATE IN PLACE OF FL. IF THICK $> 12\text{mm}$.

说明: (1) 肘板自由边长度大于 $50t$ (t 为肘板厚度), 肘板应折边或加面板。

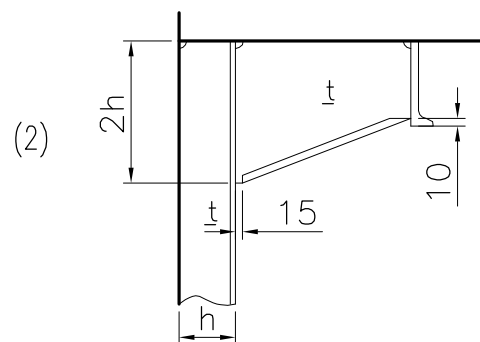
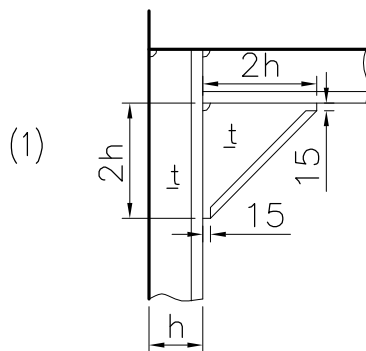
(2) 肘板厚度大于 12mm , 用T型面板代替折边。

A: ORDINARY MEMBERS END ATTACHMENT 次要构件端部连接

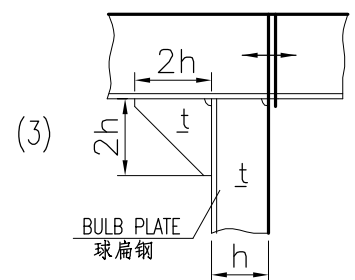
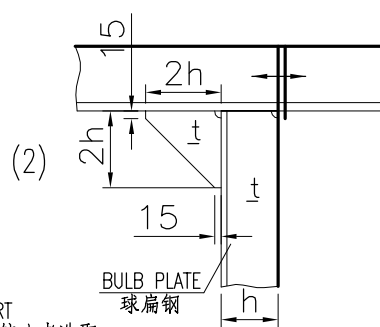
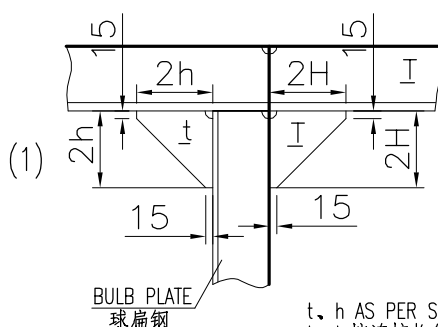
1) FRAME END TO FLATPLATE. 肋骨端部与平台



2) FRAME ENDS WITH BEAM&LONGI. 肋骨端部与横梁&纵骨连接

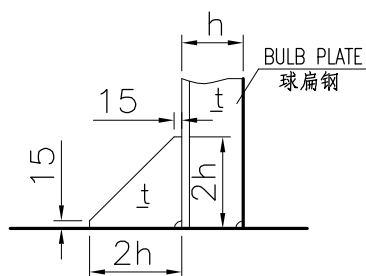


3) BEAM CONNECTED WITH BHD. 横梁与舱壁

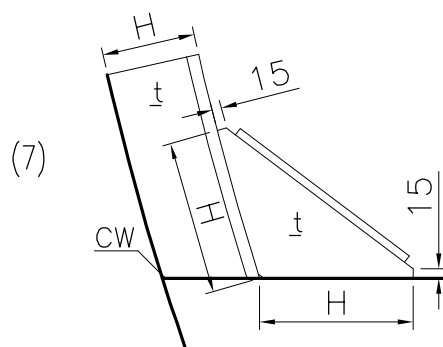
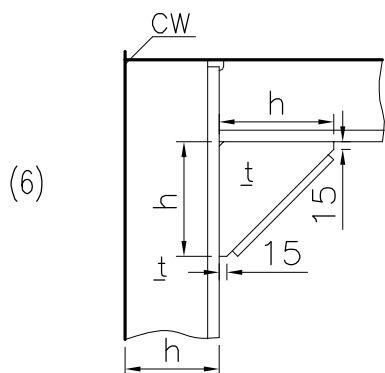
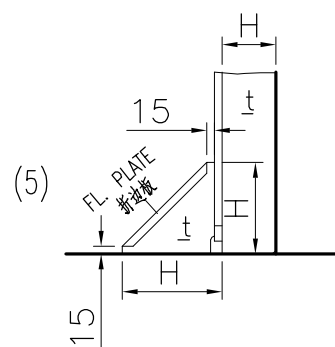
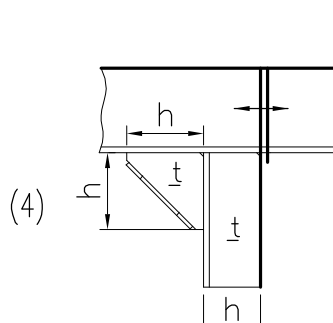
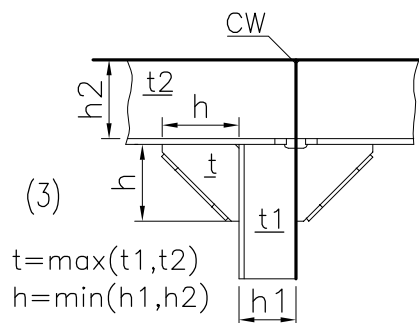
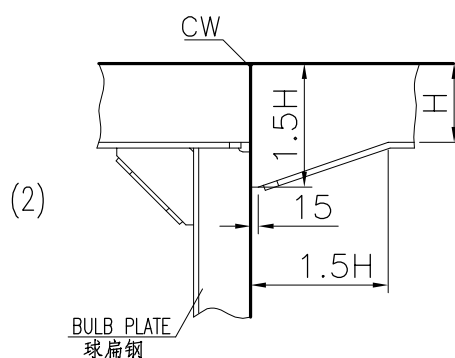
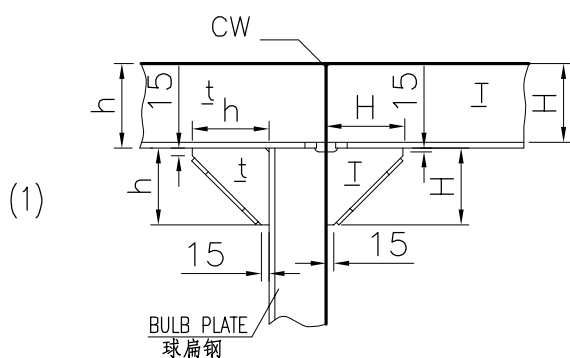


t, h AS PER SMALL PART
t, h按连接构件中型号较小者选取

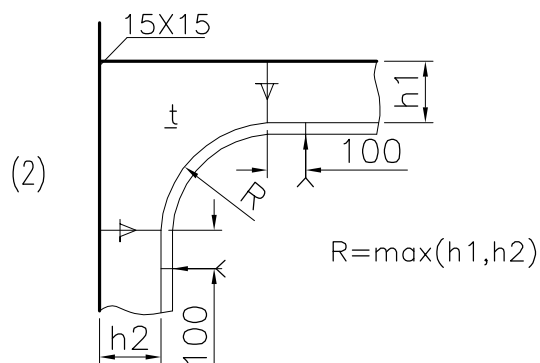
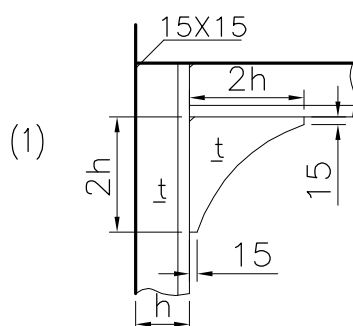
4) STIFFENER END WITH PLATE 扶强材端部与平台



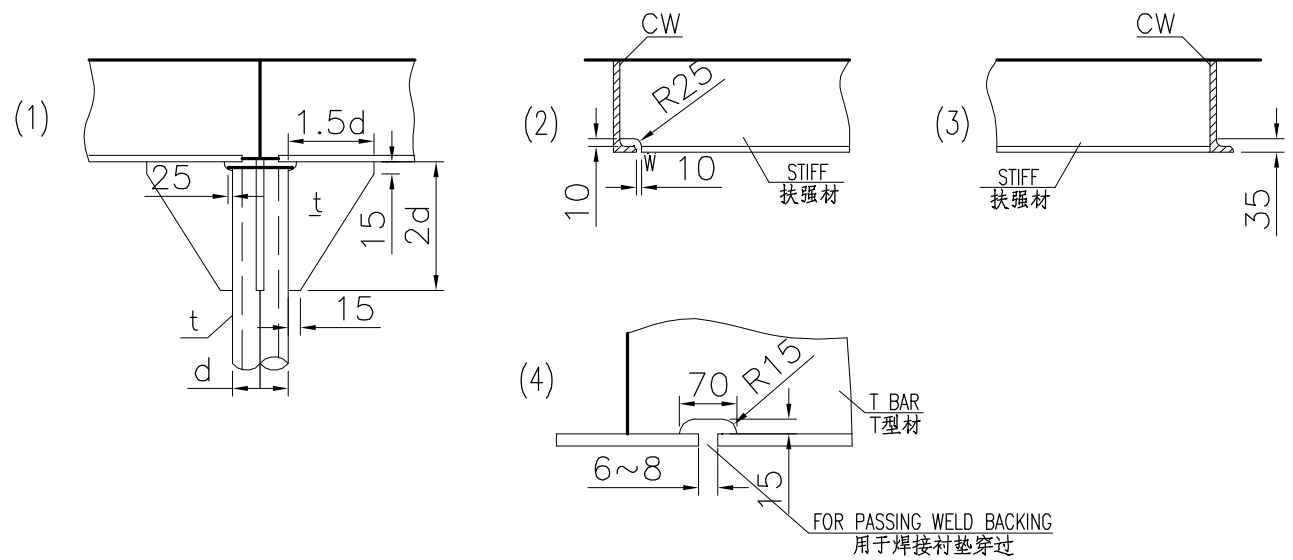
B: PRIMARY MEMBERS (T BAR) END ATTACHMENT 主要构件 (T型材) 端部连接



C: HIGH STRESS ENDS 高应力处端部连接



D: OTHERS 其他结构



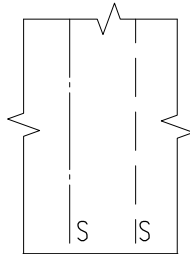
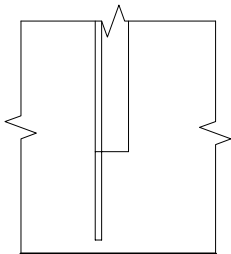
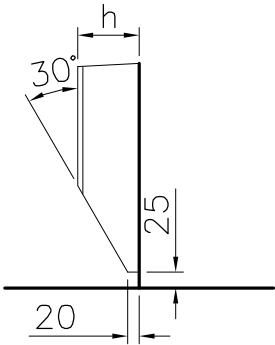
E: BKT CONNECTED WITH BEAM/LONGI. 肘板与横梁/纵骨连接

		$\theta < 65^\circ$	$65^\circ \leq \theta < 115^\circ$
PROF. TURN ENTAD 型材向内折	$d < 220$		
	$d \geq 220$		
PROF. TURN FORTH 型材向外折	$d < 220$		
	$d \geq 220$		

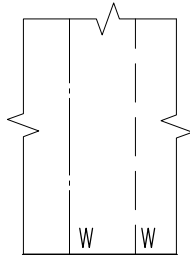
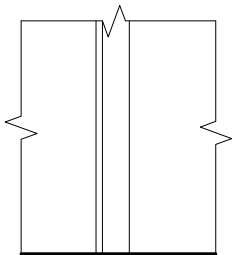
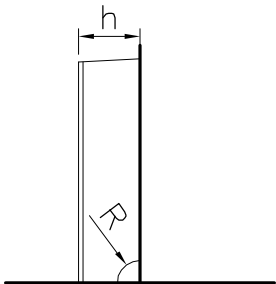
5. END TYPE 型材端部形状

A: BULB PLATE: 球扁钢

MARK: 标记

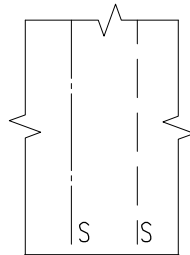
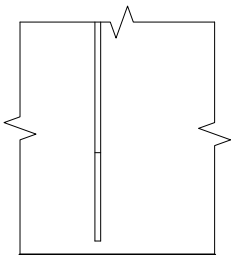
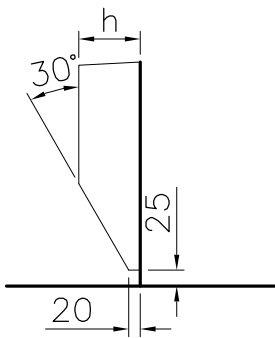


NOTE: WEB SNIP
注: 腹板削斜

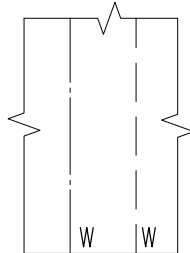
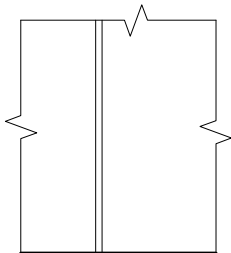
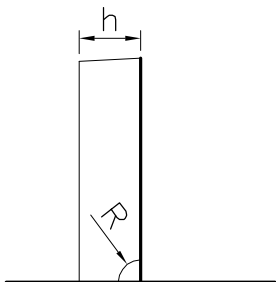


NOTE: NO SNIP
注: 端部不削斜

B: FLAT BAR: 扁钢



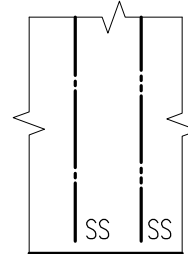
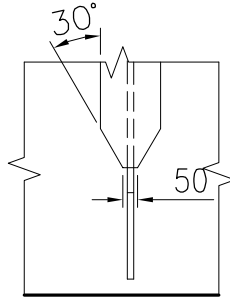
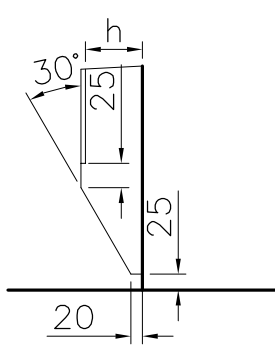
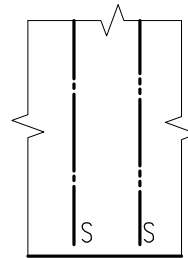
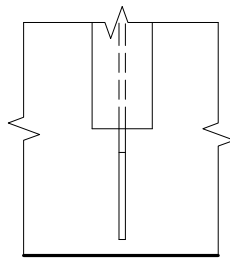
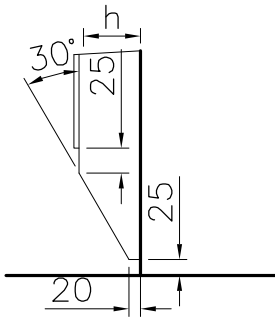
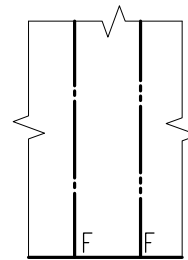
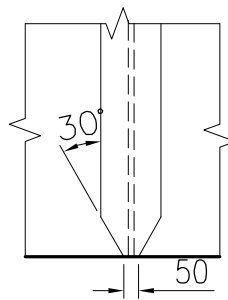
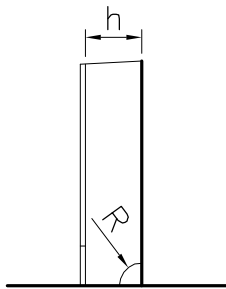
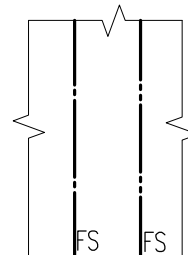
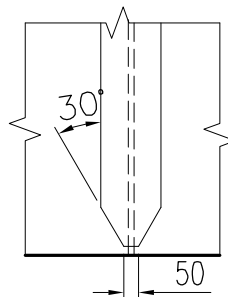
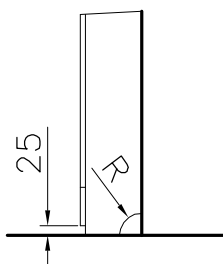
NOTE: WEB SNIP
注: 腹板削斜

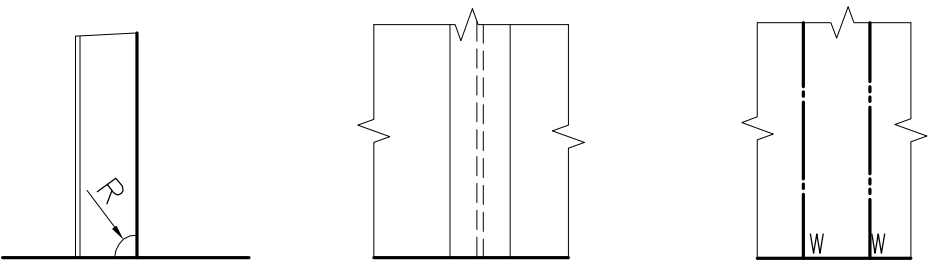


NOTE: NO SNIP
注: 端部不削斜

C: T BAR: T 型材

MARK: 标记

NOTE: WEB & FACE SNIP
注: 面板腹板都削斜NOTE: WEB SNIP
注: 仅腹板削斜NOTE: FACE SNIP & WELDING
注: 面板削斜&焊接NOTE: FACE SNIP
注: 面板削斜



NOTE: NO SNIP
注: 端部不削斜

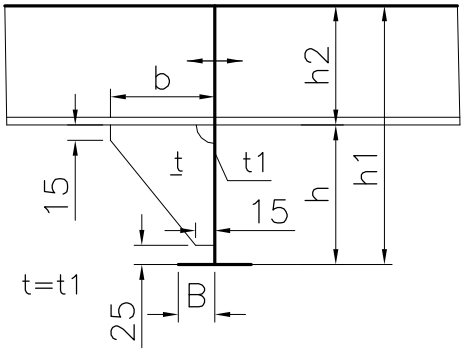
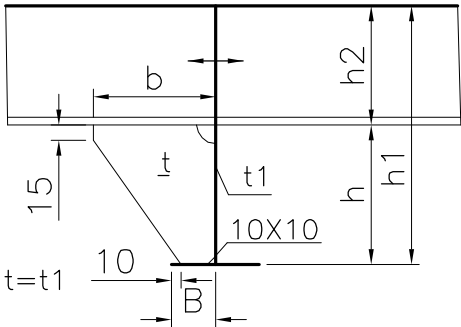
h	h<100	100≤h<150	150≤h<250	250≤h
R	CW	25	35	50

NOTE: MARKING THE SYMBOL 'CW' IN PRODUCT DRAWINGS, WHEN THERE ARE CONTINUOUS WELDING LINES CUTTING WITHOUT A 'R'(ONLY ACT AS WELDING HOLES).
注: 当焊缝连续通过而不开R时,在产品图纸中注CW(仅作通焊孔时)。

6. TRIPPING BKT. 防倾肘板

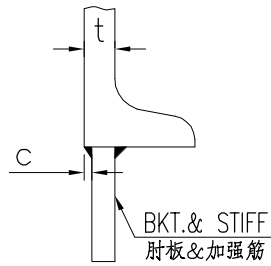
WHEN B≥50 当B大于或等于50mm时

WHEN B<50 当B小于50mm时

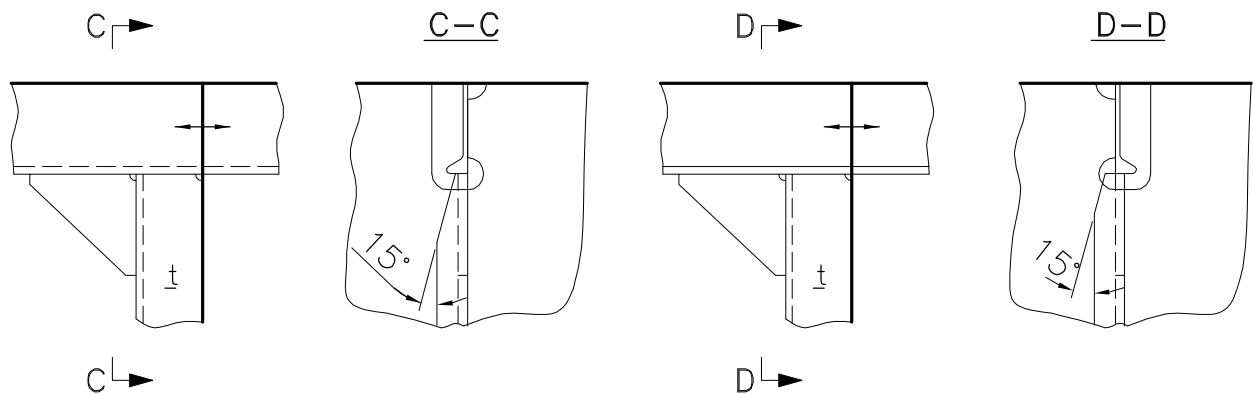
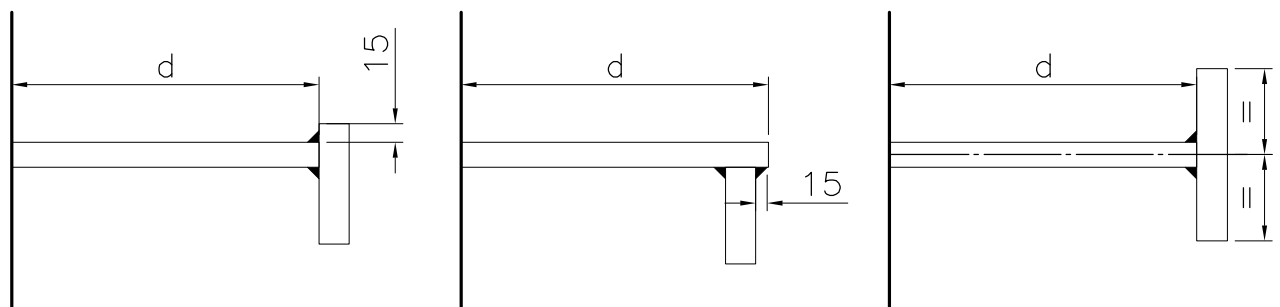


h2	h2≤0.5h1	h2>0.5h1
b	0.5h1	h

7. FITTING DETAIL OF MEMBERS 构件装配详图

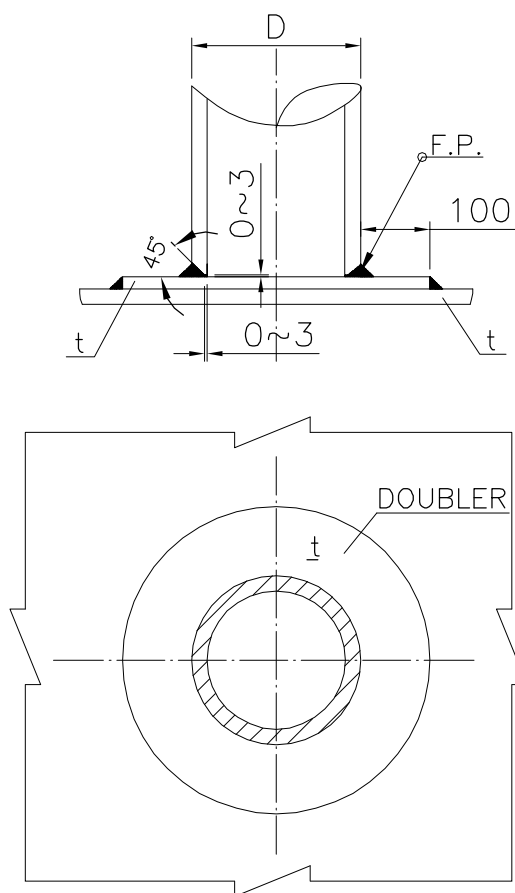
A: END CONNECTION OF BKT AND STIFF. 肘板和扶强材端部的连接

$t > 10$	$c = 8 \pm 2$
$t \leq 10$	$c = 6 \pm 2$

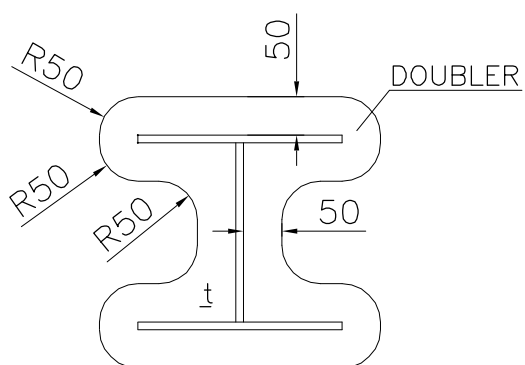
B: BULB TO BULB 球扁钢对球扁钢C: FACE BAR TO WEB PLATE 面板和腹板

8. ATTACHMENT FOR PILLAR. 支柱连接A. DOUBLER FOR PILLAR. 支柱垫板

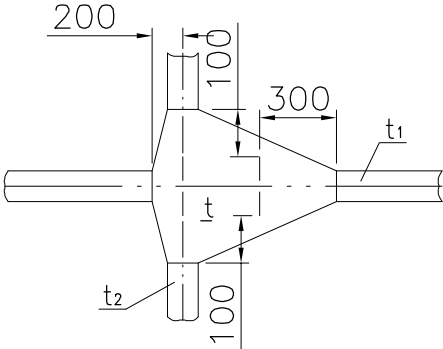
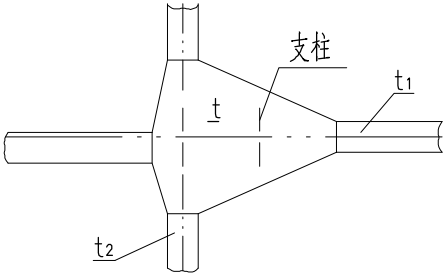
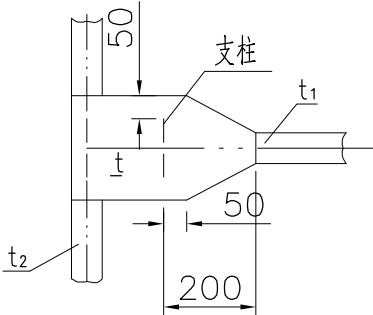
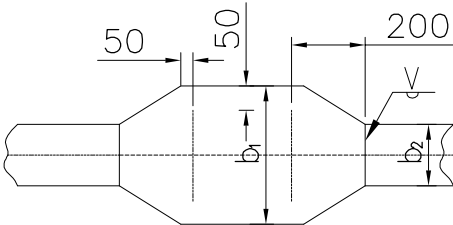
1) PIPE PILLAR. 管形支柱



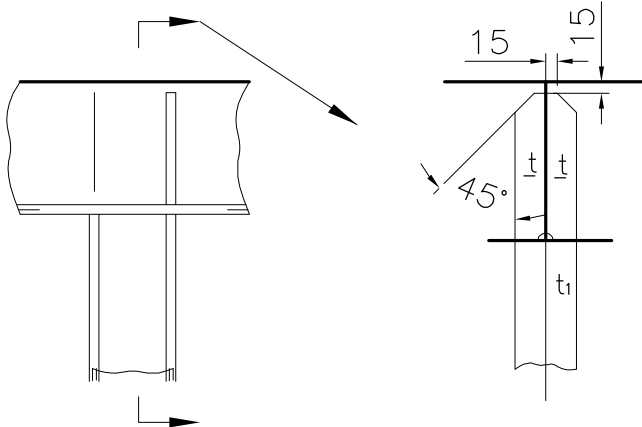
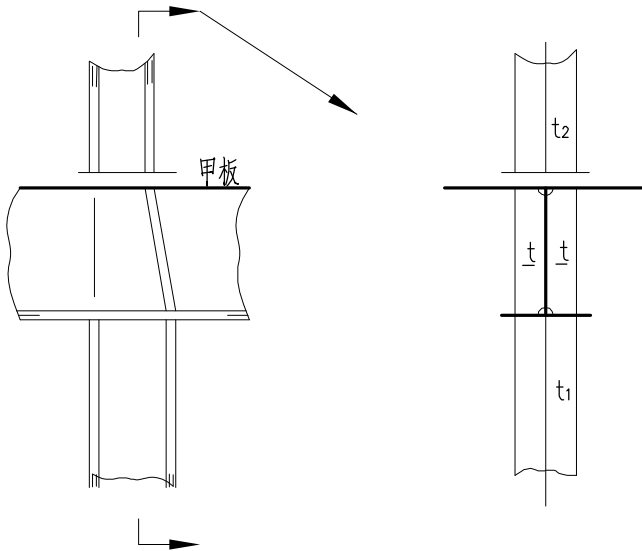
2) "H" PILLAR. H形支柱



B. INSERT PLATE FOR PILLAR. 支柱上端连接板(H型支柱)

TYPE 型式	SCANTLING 尺寸
	t to be taken greater of t1 and t2 t 取 t1和 t2 之大者
	t to be taken greater of t1 and t2 t 取 t1和 t2 之大者
	t to be taken greater of t1 and t2 t 取 t1和 t2 之大者
	

C. REINFORCEMENT FOR PILLAR. 支柱(H型)端部加强

TYPE 型式	SCANTLING 尺寸
	$t=t_1$
	$t=t_2$

9. ATTACHMENT IN SUPER STRUCTURE 上层建筑的典型连接